



**OIL COMPANIES INTERNATIONAL MARINE FORUM**

**AN EXTENDED SCOPE FOR THE  
ENHANCED SURVEY PROGRAMME  
(ESP)**

**August 1999**

*The OCIMF mission is to be recognised internationally as the foremost authority on the safe and environmentally responsible operation of oil tankers and terminals.*

The Oil Companies International Marine Forum (OCIMF) is a voluntary association of oil companies having an interest in the shipment and terminalling of crude oil and oil products. OCIMF is organised to represent its membership before, and consult with, the International Maritime Organization and other government bodies on matters relating to the shipment and terminalling of crude oil and oil products, including marine pollution and safety.

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## 1.0 INTRODUCTION

The Oil Companies International Marine Forum (OCIMF), which has consultative status within the International Maritime Organization (IMO), played a significant role in supporting the development of the IMO Resolution A744 (18) "Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers" (ESP) referred to in MARPOL Regulation 13G. This enhanced survey requirement has undoubtedly improved the safety performance of those ships which have now been subjected to more rigorous inspection.

However, whilst ESP adequately addresses the critical structural areas of the ship, the failure of critical systems can also lead to significant incidents relating to safety of life or oil pollution. Recognising the potentially serious impact of such marine incidents, the IMO and the International Association of Classification Societies (IACS), and the marine industry in general, have over the years developed legislation and guidance aimed at ensuring safe ship operation and protection of the environment. Tanker owners generally operate with strict maintenance and inspection policies, and within the unified controls imposed by the IMO, their Flag States and the Classification Societies. However OCIMF considers it timely that the industry as a whole reassesses the extent to which the enhanced survey requirements of MARPOL continue to meet the needs of the industry and of those other parties which are similarly concerned with the safety of transportation of oil by sea.

To this end OCIMF has, since the introduction of ESP, continued to maintain a regular dialogue with the Classification Societies through the auspices of IACS, and has fully supported the development of a more rigorous and effective scope for Classification Society unified inspection requirements and ultimately, it is hoped, the enhanced survey requirements of MARPOL.

The primary objective of this paper is to identify specific measures which OCIMF believes, if implemented now as a voluntary constituent part of the ESP, would consistently and uniformly improve safety of life and prevention of pollution aboard tankers which might present a higher risk because of their age. It will formalise measures which are already being implemented by many owners on a voluntary basis and will contribute to the elimination of the need for a multiple inspection regime. Means of encouraging or ensuring implementation of the various improvement measures have not been specifically identified although some recommendations have been made.

## **2.0 STRUCTURAL EXAMINATION**

### **2.1 Engine Room Structure**

ESP effectively covers the vessel's structural condition forward of the accommodation block and within the aft peak tank. However, Engine Room (E/R) structure is not specifically included within the ESP remit, but is nevertheless important, particularly below the bottom floor plates where corrosion can continue unnoticed. In order to address this shortcoming, OCIMF recommends that an examination of E/R structure be carried out in conjunction with Special and Intermediate Surveys. This examination should include tank tops, shell plating in way of tank tops, brackets connecting side shell frames and tank tops, and engine room bulkheads in way of tank top, bilge wells and other areas below the bottom floor plates. Thickness measurements may also be required if areas of corrosion are found. OCIMF understands that IACS is presently considering inclusion of this aspect in its Unified Requirements related to ESP.

### **2.2 Pitting Corrosion**

Presently, ESP has no requirement for recording pitting corrosion in tank bottoms despite the potential source of hole leaks which it represents. OCIMF recommends that pitting corrosion is specifically examined and reported as part of the Enhanced Survey. The Survey Report File should include records of any bottom plating with a pitting intensity of 20% or more with wastage in the substantial corrosion range, or where the average depth of pitting is 1/3 or more of the plate thickness. OCIMF understands that IACS is presently considering inclusion of this aspect in its Unified Requirements related to ESP. For pitting assessment, reference should be made to the "GUIDANCE MANUAL FOR TANKER STRUCTURES " issued by Tanker Structure Cooperative Forum.

### **2.3 Coatings and Anodes**

Recognising the importance of structural integrity within ballast or combined cargo / ballast tanks, and understanding the benefits of reduced corrosion levels when anode protection is utilised, OCIMF recommends that, where a coating has not been applied or where a coating is found in Fair or Poor condition as defined in IMO resolution A744 (18), the overall anode condition should also be recorded as a function of the close-up survey.

An estimate of the overall anode wastage as a percentage of the original weight should be recorded in the Tank Corrosion Prevention System Table in the Survey Report File.

## 2.4 Presentation of Thickness Measurements

Thickness measurements taken for the ESP are usually reported in a substantial book which contains the data in the format mandated by the IMO. The data is voluminous and, as currently presented, requires a significant amount of expert analysis for an assessment of the condition of the ship's hull to be made. OCIMF believes that there is a need for a simplified presentation which will enable the user to obtain an overview of the hull condition.

OCIMF therefore recommends that owners include a graphical presentation of the readings as an attachment to the reports on thickness measurement. Most gauging contractors already record the readings on a spreadsheet which makes it relatively easy to produce some type of graphical analysis. It has been found that a cumulative plot of the percentage number of readings against the percentage diminution from the original thickness gives a simple and effective presentation which can be used to fit that purpose. Examples of a gauging table with sample data entered and of the corresponding graphical presentation of thickness measurements are shown in Table 1 and Figure 1 respectively.

The horizontal axis of the plot represents the percentage diminution of any reading below its original thickness and the vertical axis represents the number of readings which are less than that diminution, expressed as a percentage of the number of readings taken.

It is recommended that separate plots be provided for:

- Bottom and Side Shell Plating
- Deck Plating
- Transverse webs
- Transverse and Longitudinal Bulkhead Plating.
- Other Longitudinal Elements
- Peak Tanks
- and one for all the readings combined.

### **3.0 HIGH RISK PIPING ON DECK**

Failure of oil piping, including all associated valves, located on the cargo deck of a ship exposes the operator to a significant risk of pollution should the pipe accidentally fracture and spill its contents onto the deck. OCIMF recommends that all such deck piping is visually examined and operationally tested to at least working pressure at least once per year. The results should be recorded and held aboard the ship.

It is envisaged that such piping and associated valves will include, but not necessarily be limited to, that associated with the following systems:

- Cargo piping
- Crude oil washing piping
- Hydraulic mains
- Fuel oil and lubricating oil bunker piping

Wherever possible, and to reduce the testing time, it is recommended that testing be carried out on the complete system rather than on individual isolated components. This testing should be carried out in conjunction with Class periodical surveys and the attending surveyor requested to witness and verify the outcome.

#### **4.0 MACHINERY VERIFICATION RUNS**

The risk of machinery failure is significantly higher immediately following an extensive repair or lengthy vessel deactivation period. This can be particularly relevant to the safe and reliable operation of the ship if the repair facility is nearby the first loading port to which the ship is ordered.

To reduce the risk of machinery failures at this critical time, OCIMF recommends that if significant maintenance or repair is carried out on the main propulsion machinery and / or the steering gear system and / or any auxiliary machinery / systems essential to the propulsion and safety of the ship, then on conclusion of the repair period the operation of the complete machinery system should be verified under controlled conditions by a test run which includes at least 1 hour at full power.

OCIMF further recommends that should the vessel be required to be deactivated for a period exceeding 2 weeks then upon reactivation the operation of the complete machinery system should be verified under controlled conditions by a test run which includes at least 1 hour at full power.

In each case this testing should be carried out in the presence of Class and the surveyor requested to witness and verify the outcome.





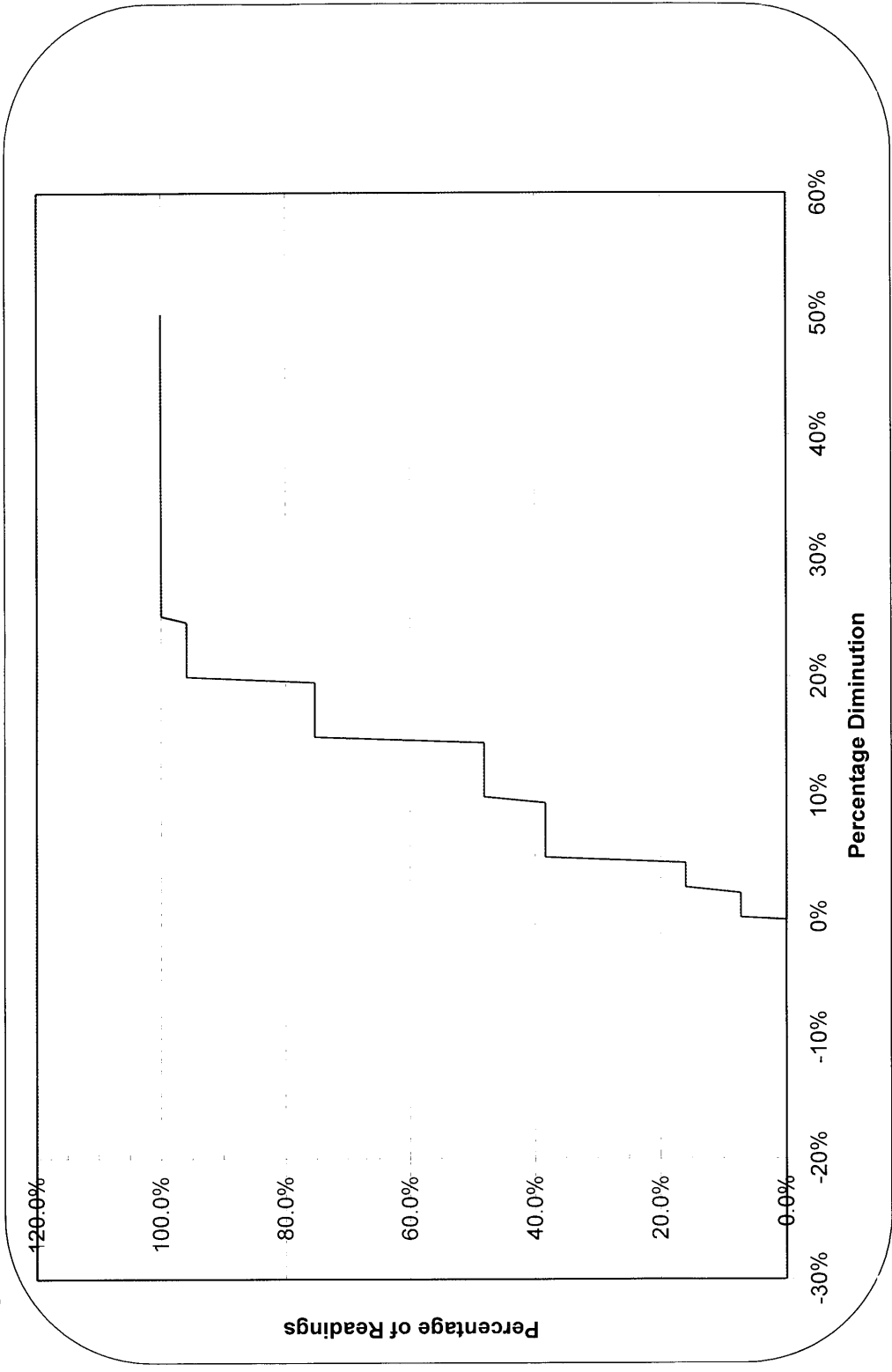








**Graphical Presentation of Thickness Measurements using Sample Data from Table 1**



**Figure 1**

